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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/981,254 | 10/18/2001 | Toshihiko Suenaga | Q66783 | 5976 |

7590 06/17/2005

SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 Pennsylvania Avenue, NW
Washington, DC 20037-3213

EXAMINER

HODGE, ROBERT W

| | |
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| ART UNIT | PAPER NUMBER |
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1746

DATE MAILED: 06/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,254

Applicant(s)

SUENAGA ET AL.

Examiner

Robert Hodge

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 and 19-21 is/are allowed.
- 6) ☒ Claim(s) 15, 17, 18 and 22-26 is/are rejected.
- 7) ☒ Claim(s) 27 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 20050420
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. The rejections and objections of claims 1-14 have been withdrawn because the claims have accordingly been canceled.
2. Applicant's arguments filed 4/27/05 have been fully considered but they are not persuasive. Applicants argue that Wakamatsu does not teach a step in which the MEA is inserted into a frame so that lateral surfaces are in intimate contact with lateral surfaces of the seal. However as can be seen in figure 6 the membrane 12 abuts the seal 6 at the outer periphery 13 and both objects are in intimate contact with one another on lateral surfaces and on planar surfaces. The membrane does not go through the seal and does not have contact with the gasket 2 at the inner periphery 4 (Fifth embodiment of the invention).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 15, 22, 23, 25 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Wakamatsu.

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5. Wakamatsu teaches a MEA or fuel cell with a frame shaped gasket (column 3, lines 45-46), which has an additional sealing bead coated thereon (column 3, lines 62-63) having a trapezoidal cross-section (column 4, line 67 and column 5, line 1), formed from numerous materials (column 3, lines 50 et seq. and column 4 lines 5-6) that is bonded (column 3, line 67) and integrally formed (column 4, line 2). Wakamatsu also teaches that bipolar plates and a membrane come into intimate contact with the sealing section at a side or end portion and an exposed lateral surface (column 1, lines 10-62 and column 5, lines 4, and 34-36), that separators are used between each MEA (column 1, lines 10-62) and that the membrane is clamped by the gasket (which would hold it in place). Wakamatsu further teaches projections from the gasket body (column 3, line 54) and that the sealing section has an upper sealing section, a lower sealing section and an inner sealing section (column 3, lines 64-65). The examiner notes that there are outer linear protrusions in figures 4-6 indicated by 7 and 8 which when stacked to form a fuel cell stack would contact the MEAs that are respectively above and below an MEA.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 17, 18 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wakamatsu in view of Kaneko et al.

8. Wakamatsu teaches everything in the above 102 rejection. As well as the gasket frame can be composed of metal and other rigid materials and that a seal is applied onto it (column 3, lines 45 et seq.), therefore because of this disclosure the examiner has reason to believe that such a combination implies the presence of a reinforcing member in the MEA.

9. Wakamatsu does not teach the use of hot pressing.

10. Kaneko et al. teaches "A cell 10 can be prepared by adhering materials for an anode 12 and a cathode 13 to an ion exchanging membrane 11 by hot press." (page 2 paragraph 3).

11. At the time of the invention it would have been obvious to include in Wakamatsu the step of hot pressing as taught by Kaneko et al. in order to use a conventionally well known bonding method in order to provide an air tight seal, to prevent gases from leaking out of the stack thus causing a potential explosion hazard due to the presence of Hydrogen and Oxygen as well as preventing Oxygen from entering the anode side, wherein the Hydrogen would then react therewith and no mass transport would occur across the membrane thereby preventing the desired electrochemical reaction.

Allowable Subject Matter

12. Claims 27 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claims 16 and 19-21 are allowed.

14. The prior art made of record fails to teach or fairly suggest an adhesive that is applied on an exposed planar surface of a seal that corresponds to an exposed planar surface of an electrolyte membrane or that one electrode has a larger planar surface area than the other electrode. The prior art does allow for the use of adhering materials but not specifically an adhesive nor where in particular it should be properly applied in the MEA.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Hodge whose telephone number is (571) 272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RWH 6-13-05


BRUCE F. BELL
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GROUP 1746